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whaling fleet the story of the burning of San Francisco, the port as well as home of many of the officers and men. Captain Amundsen's little sloop, the *Gjöa*, was also in the harbour, but left a few days later to finish her now famous voyage of the North-West Passage.

GEOGRAPHICAL RECORD.

AFRICA.

ARTESIAN WELLS IN THE SAHARA.—The French are still energetically reclaiming desert lands by means of artesian water supplies. According to the *Revue Générale des Sciences* the results of sinking wells in southern Algeria are very satisfactory. In the winter of 1906-7, about 7,500 gallons of water per minute were thus added to the available supply in the territories of Tuggurt, Ghardaia, the Saharan oases and the route between El-Arich and Berguent. This supply was sufficient for the irrigation of nearly 2,000 acres of palm groves containing approximately 120,000 trees and yielding an increase of revenue to the proprietors of about \$80,000 per year, in addition to the value of subsidiary crops which can be raised in a grove, including forage plants, vegetables, and fruit trees. In the region of the Wady Rir a new well gives the exceptional supply of 2,600 gallons per minute, irrigating the old palm groves around it and permitting the formation of a new oasis of more than 30,000 palms.

COTTON CULTIVATION IN THE SUDAN.—As the cultivation of cotton may become important in the Anglo-Egyptian Sudan, some facts on the subject supplied by the Sudan Agency are of interest. Land may be bought either from the natives or from the Government, but purchases from the natives are not encouraged, as they are prone to dispose of all their land and become destitute. The areas of governmental land, suitable for cotton cultivation on a small scale, are insignificant, but, in special cases, the Government arranges concessions on a large scale. At present, the condition of the labour market hardly warrants any increase in the number of concessionaries beyond those who have already made application. The applicant must satisfy the Government that he commands sufficient capital to develop the land, and he is required to bring into cultivation a certain area each year and carry out specified works to the satisfaction of the Government. After he has brought the land under cultivation and fulfilled the obligations of the lease, he has the option of purchasing the land.

BOUNDARIES OF GERMAN EAST AFRICA.—*Die Mitt. aus den Deutsch. Schutzgebieten* (Vol. xx, part iv) describes the astronomical and geodetical observations made in 1902-5 by the German Commission for fixing the boundaries of German East Africa. The first report is given to the Lake Kivu expedition under Capt. Herrmann, with Prof. Lamp as astronomer. The two other reports give the results of the German-Uganda boundary expedition under Captain Schlobach. On the Kivu expedition, Prof. Lamp established an astronomical station at Usambara and determined a value for its latitude. Full tables are given of the geodetic

results obtained in the neighbourhood of Lake Kivu, which, with the figures supplied by Captain Schlobach, furnish the data for the triangulation of a map of the district west and north of Lake Victoria. Triangulation was continued east of that lake from a base at Port Florence, the work being carried as far as Kilimanjaro and thence connected with Zanzibar. The accompanying map shows the boundary line between British Uganda and German East Africa from lake Victoria to Kilimanjaro. Accounts are also given of the altitude measurements made by both expeditions.

THE ORIGIN OF THE BANTU.—The Government of the Cape of Good Hope supplied the means that enabled Mr. J. F. Van Oordt to give three years of close study to the Bantu question, and has also published his results under the above title in a pamphlet of 97 pp., which the Colonial Secretary has sent to the Society. The author calls his paper merely a preliminary study, but he believes he has found clues that will help to unravel the secrets of Bantu philology and of the institutions, customs, and religious ideas of that widespread race. Briefly, his philological studies have convinced him that the Bantu languages belong to the linguistic group generally known as the Ugro-Altaic; and he thinks he has discovered that the original home of the Bantu was the peninsula of Malacca, and that the present pagan races of that region are ethnographically and linguistically related to the existing Bantu races of Africa. The larger part of the paper is given to his comparative philological evidence. He expects to make further researches along the lines he has opened.

AMERICA.

DETERMINATION OF THE HEIGHT OF ACONCAGUA.—In 1904, Mr. F. R. Schrader, the well-known French geographer and cartographer, visited Mount Aconcagua, to attempt a final settlement of the long-disputed question of the height of this culminating point of the western world. The first attempt to ascertain the height of the mountain was made by Admiral Fitzroy in 1835, but to the present time the determinations of explorers have been contradictory, and it was not to be expected that a satisfactory determination would be reached without exact triangulation. Mr. Schrader decided to attempt triangulation in preference to the more unreliable hypsometrical estimates. He had the advantage of the levels of the Trans-Andean railway, which supplied a ready means of obtaining the height of the base from the ends of which he took vertical and horizontal angles. The mean of his measurements gives a height of 22,812 feet, which result is only 56 feet lower than the height given by P. Güssfeldt. As Schrader's observations were repeated and checked by various methods, the mean resulting height is probably the most accurate determination made to this date.

CARD CATALOGUE OF SOUTH AMERICANA.—In a paper read before the American Political Science Association on Dec. 28, 1907, Dr. Hiram Bingham of Yale University referred to the card catalogue of South Americana on which he has been engaged at intervals for seven years. It is now accessible for use in the Yale library, and, though far from complete, it contains about 25,000 cards and is continually growing. It has cards for the South American collections in the Harvard, Princeton, and Yale libraries and the library of Congress; also for many books not at present known to be available. Cards for books in the John Crerar and the Newberry libraries of Chicago and the Columbus Memorial library are about

to be added. It is hoped to make it a subject catalogue for all material relating to Spanish-American history, politics and geography, and, as far as possible, the index will give the whereabouts of at least one copy of each book. The most striking fact deduced from a study of this catalogue is the scarcity of trustworthy, comprehensive works in English and of scholarly monographs in any language.

THE NATIONAL CIVIC FEDERATION (*Executive Secretary*, Roland P. Falkner, 281 Fourth Avenue,) has undertaken to arrange for a visit of 500 or more selected American teachers to inspect the schools and colleges of Great Britain and Ireland. Of these 50 may visit the Continent, landing at Antwerp.

The trip must be made between September, 1908, and January, 1909, east-bound, and between November, 1908, and March 15, 1909, west-bound, in the second cabin of a steamer of one of the following lines:

White Star Line, New York to Southampton, or Liverpool;

Do. do. Boston to Liverpool.

American Line, New York to Southampton;

Do. do. Philadelphia to Liverpool.

Red Star Line, New York to Antwerp and Dover.

Dominion Line, Montreal to Liverpool.

Fare: Five Pounds for the round trip.

Nominations must be made by Boards of Education, Boards of Trustees, or other proper authorities, through whom applications must be transmitted on or before June 1, 1908, on a form which will be sent upon request.

TABLE OF HARBOUR DEPTHS.—The U. S. Coast and Geodetic Survey has issued the third edition of the "Table of Depths for Channels and Harbors" (*Bulletin* 36). It includes the United States, Porto Rico, and the Hawaiian and Philippine Islands. It is noted in the preface that in the Gulf of Mexico, west of Florida, the effect of the wind is far greater than that of the tide, the depth of water varying with the direction, intensity and duration of the wind. On our Pacific coast south of Canada we have only two ports, San Diego and San Francisco, that are secure from all winds and also readily accessible.

REPORT OF THE MISSISSIPPI RIVER COMMISSION.—Annual Report of the Chief of Engineers, 1907, Appendix 000. II and 163 pages (pages 2605-2768). 1 plate. Government Printing Office, Washington, 1907.—This volume follows the plan of former reports of this Commission. The book is made less bulky than many which have preceded it by the omission of all but one plate. A concise statement of the work done during the year, and of the results of that work relative to protection from flood and navigability of channel, opens the report. This is followed by a statement of appropriations and allotments and four appendixes. Appendix 1 contains the report of the secretary of the Commission and is a detailed account of surveys, gauges, observations, dredges and dredging. The commercial statistics for the calendar year 1906 are included. Appendixes 2, 3 and 4 contain the reports of the engineers in charge of the First and Second, Third and Fourth Districts of the river. The stages of the Mississippi River were unusually high during the fiscal year (July, 1906-June, 1907). The low-water season was a short one, ending about November 17. During the season, a small amount of dredging was done in anticipation of a continuation of the falling stage of the river to the end of the year. Depths of 10 feet and over were found on all crossings throughout the year. The high-water season was marked by an early (January) and

dangerous rise of the river, which at Cairo was the highest recorded for that month and lacked 1.8 feet of the highest stage for the station. The flood was handled with comparative ease.

The reports are published without indexes. For the convenience of those who may desire to use some of the material of this report, the following partial index is added:

Appropriations and allotments.....	2606, 2626.
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Hydrograph of river for the year.....	opposite 2674.
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protection	2622.
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Surveys	2609, 2620, 2646, 2693, 2707, 2748.
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R. M. B.

ASIA.

DR. SVEN HEDIN'S LATEST WORK.—News from Dr. Sven Hedin, reported by the Associated Press, is to the effect that he has recently visited Nepal and has, for the fifth time, crossed the gigantic mountain range, about 2,000 miles long, extending from the Salwin to the Panj River, collecting valuable details concerning it. He has discovered that the true source of the Brahmaputra is the Kubitsanpo, which rises from an enormous glacier on the northern side of the northernmost parallel range of the Himalayas. He has found that the Marium-chu, which has hitherto been regarded as the source, is merely a small tributary flowing in from the west.

He also made a careful study of the hydrographic problems relating to the Manasarowar and the Suttlej, and then made the circuit of the Kailas peaks, discovered the true source of the Indus, and travelled northeast to 32° N. Lat. At last accounts he was going to Ladakh and Khotan, *via* the road running east of the Karakoram Pass. In the spring he will travel either to Peking or to India.

RECLAIMING A PART OF THE SALT DESERT OF ASIA MINOR.—About a third of the vilayet Konia, the largest province in Asiatic Turkey, is occupied by a salt desert, which was formerly a part of the sea floor. In the desert is the salt lake of Kotch-Hissar, area 300 square kilometers, all that remains of the former sea. The Turkish Government has given a concession to the Anatolian Railroad Company (German), to reclaim the southwestern part of this desert in the neighbourhood of the town of Konia by irrigation works, similar to the system used in Egypt. It is expected to reclaim about 150,000 acres by leading to the district

water from the large Bey-Schehir Lake among the mountains 120 miles to the west, and distributing the water over the land by hundreds of irrigation channels. It is estimated that the annual yield of wheat from this land will fill 20,000 freight cars, and that it may be sent conveniently to various divisions of the Turkish army as a part of their food supply. The new farm lands will add considerably to the freight business of the railroad and will thus reduce the liability of the Turkish Government, which guarantees that the receipts of the Anatolian Railroad and its extension to Bagdad shall not fall below 17,000 francs a kilometer per annum. (*Geog. Zeitsch.*, 1908, No. 1, p. 49.)

THE HEDJAZ RAILROAD.—The *Frankfurter Zeitung* says that the directors of the Hedjaz Railroad have made a provisional agreement with Dr. Blankenkorn, a German geologist, to study the basin of the Dead Sea for petroleum, and to investigate the mineral resources of the regions bordering on the railroad. The Board of Trade *Journal* (No. 585) says that in consequence of the opening of the Haifa-Damascus section of the Hedjaz Railroad, the town has become a prosperous place and three trains a week are now run from Haifa to Damascus and Ma'an (Petra), beyond which point only Mohammedans are allowed to travel.

COMMERCIAL HANDBOOK OF THE DUTCH EAST INDIES.—No. 2, Vol. 6, of the *Abhandlungen* of the Vienna Geographical Society, is a handsome volume of over 300 pp. entirely devoted to Dr. F. A. Schoeppel's "Kommerzielles Handbuch von Niederländisch-Indien," an economic study. The author describes the native and foreign population, the latter including 28,000 Arabs from Hadramaut, on the south coast of Arabia. The Arabs are not accompanied by women of their own race, but marry native women. The geology, geography, climate, flora, and fauna are sketched in their most salient features, but rather too briefly. The colonial policy and laws and regulations relating to property, business, colonial finance, the tariff, etc., are treated at length.

The trade in opium, edible birds' nests, salt and the pawnshops are government monopolies, which in 1905 yielded a profit of 11,897,000 florins. All the needs and opportunities of trade, agriculture, and manufacturing, the labour supply, etc., are discussed with a view of enlightening European capitalists who may wish to invest money in plantation or other colonial enterprises. Fine photographs showing chiefly superior specimens of native art works are a feature.

AUSTRALIA.

SURVEYS IN WESTERN AUSTRALIA.—The Geological Survey of Western Australia is pushing forward its examination of the various mining centres and issuing reports dealing with the geological features that bear upon economic questions. *Bulletin 28* describes mining centres in the East Murchison, North Coolgardie, and Mount Margaret gold fields whose rocks may be divided into an acidic and basic series, viz.: the granites and the greenstones. Economically the latter are the more important, as they form the matrixes of the paying auriferous reefs. The report is accompanied by two maps and five mining plans. The district reviewed returned, up to the end of 1906, 581,104 ounces of fine gold, of which 4,441 were derived from alluvial deposits.

The Department of Lands and Surveys is also rapidly carrying forward the work of surveying areas adapted for agriculture and town sites. The *Report of*

the Surveyor-General for 1907 says that during the fiscal year ending June 30, 4,149 rural blocks, containing 1,061,068 acres and 2,417 town lots, were surveyed and about 2,650,200 acres were classified.

THE AUSTRALIAN TRANSCONTINENTAL RAILROAD.—The two legislative chambers of the Commonwealth of Australia have voted favourably upon the project to complete the transcontinental railroad between Adelaide, the capital of South Australia, and Port Darwin, on the north coast. The portions of the line already in operation extend in the south from Adelaide to Oodnadotta (67½ miles) and in the north from Port Darwin to the mining district of Pine Creek (198 miles). The line to be built between these points will be 1,240 miles in length. The project originated in 1872. The company formed to build the road demanded a concession of about 2,000,000 acres along the route. This condition was not accepted, nor was the later proposal to carry out the project for a consideration, including a concession of 1,000,000 acres. The importance of completing the railroad, both as a convenient route for Australasian commerce with the Orient and also for the development of the North West Territory of South Australia, whose mining and agricultural resources are found to be large, has long been emphasized by the Australian press.

EUROPE.

THE SHANNON RIVER.—Mr. J. R. Kilroe, of the Geological Survey of Ireland, has written a paper on the present course and geological history of this river, printed in the *Proceedings* of the Royal Irish Academy (Vol. 26, Section B, No. 8). He reaches the conclusion that a post-Eocene plain of denudation probably existed in this region some 2,500 feet above the present limestone plain, and it was upon this ancient plain that the Shannon originally began to flow. At the present rate of surface waste, the lowering of the surface to the present level may have occupied 15,000,000 to 30,000,000 years.—This period, however, may have been greatly shortened by glacial erosion of the surface. The gouging action of the glacier is apparently the only thing that can account for the present form of the Shannon bed above Killaloe. Prior to the glacial period the river was probably forced to abandon the Killaloe gorge for a time, and flowed along the Scarriff Valley towards its estuary. Upon the melting of the glacier the bottom of the gorge had become so modified that the river could resume its course there and southward as far as O'Briensbridge, though thereafter it became deflected from its original course by morainal accumulations.

GUIDES TO SWEDEN.—The *BULLETIN* has heretofore mentioned the excellent series of guide books issued by the Swedish Touring Club of Stockholm. The latest to appear is a revised edition of the volume "Sweden," published in English and other languages. It has large-scale coloured maps and is filled with condensed and well-arranged information concerning the tourist routes in the kingdom. An especially interesting section is devoted to Lapland, describing the tour on the Arctic railroad from Boden to Narvik, the ice-free port on the Atlantic, and the various trips for pedestrians and canoe men among the fine highlands.

POLAR.

MR. STEFANSSON'S INVESTIGATIONS AMONG THE ESKIMOS.—Mr. V. Stefansson, who returned last fall from the Mackenzie River delta, after living a year with

the Eskimos of that region, will start again for the north coast of the continent, late in April, for the purpose of renewing his studies among one or more Eskimo groups of whom very little is known. After reaching Herschel Island, early in August, he expects, if the ice conditions permit, to be taken east as far as the Baillie Islands, Cape Bathurst, on the whaler *Narwhal*, Captain Leavitt, commander. From this point he will endeavour to make his way eastward for the purpose of spending next winter either with the Eskimos of the Duke of York Archipelago in Coronation Gulf, or, if it seem best, he will endeavour to reach the natives of Victoria Land, further north.

Mr. Hanbury, during his travels in northern Canada, met one family of the Coronation Gulf natives while they were hunting south of the mainland coast near Dismal Lake. With this exception, it is believed that no white man has come into contact with this group of natives. Collinson and M'Clure, over fifty years ago, barely met a number of the Eskimos of Victoria Land, and Captain Klinkenberg, in the whaler *Olga*, spent the winter of 1905-6 in Prince Albert Sound, west coast of Victoria Land, where he met two groups of the natives, who told him that in the interior of the island were two other groups. These facts indicate that the regions of Coronation Gulf and Victoria Land afford very favourable opportunities for ethnological study among groups of natives practically unknown to the white race.

If the travel conditions prevent Mr. Stefansson from reaching these eastward natives, his plan is to go further west to the mouth of the Colville River which he will ascend to the region occupied by the Nunatama or inland Eskimos, 200 or 300 in number, probably more than half of whom have never seen a white man, and who seem to be the least known scientifically among all the Eskimos of Alaska.

Mr. Stefansson expects to be gone about a year and a half on this expedition. The American Museum of Natural History has chiefly contributed to make the work possible. He will reach the Arctic overland, *via* the Mackenzie River, taking part of his supplies with him while the remainder will be carried north in the whaler.

MR. LEFFINGWELL IS SPENDING THE ARCTIC WINTER in the camp at Flaxman Island, well supplied with everything needed. He is working up his summer notes and surveys, and will go on for another year, mapping that coast region, and making geological surveys of a range of mountains inland. Mate Storkersen, who made the sledge journey with the leaders last year, will return this spring, and remain with Mr. Leffingwell for a year and a half. Supplies for them and for some Eskimo families will be forwarded by the courtesy of Captain Henderson, Revenue Cutter *Thetis*, who will take the goods as far as Point Barrow, where they will be transferred to a whaling vessel and taken on to Flaxman Island. In case a landing cannot be made there, the provisions will be taken to Herschel Island.

There is difficulty in landing anything at Flaxman. The camp will have to be abandoned if provisions cannot be placed there before the winter sets in. The Eskimos in that region are very poorly supplied, and will suffer severely if they lose the aid of the explorers. Letters and packages forwarded to Captain Henderson, U. S. R. C. S., will be taken by his vessel to Point Barrow, and forwarded by a whaling vessel from that point. Mr. Leffingwell intends to return October, 1909.

The *Thetis* sails from Port Townsend, Washington, about May 1st.

UNDERGROUND ICE-SHEETS OF THE ARCTIC TUNDRA.—Mr. Leffingwell's article on Flaxman Island* may be considered the first of the geological contributions of the Anglo-American Polar Expedition, of which he is one of the joint commanders. Essentially the article is a consideration of the underground ice-sheets which are such a well-known (though variously explained) feature of the Arctic tundra. The conclusion reached is that in the case of Flaxman Island the ice-sheet underlying the surface soil of most, if not all, of the island is of glacial origin. This conclusion is based upon two facts: (a) that "when the ice is closely examined it is seen to be full of minute air bubbles and to be coarsely granulated; which shows it could not have been formed by the freezing of a body of standing water," and (b) the fact that both in the soil above the ice and imbedded in the ice itself are small boulders showing glacial striation. The mountains to the south (twenty to forty miles away) are pointed out as a convenient source for the glacier, though (quoting Schrader†) the tops of the mountains do not show signs of having been overridden by a moving ice-sheet. The argument is that, nevertheless, the northward slopes and valleys may have been breeding places for glaciers.

It may be that neither time nor other circumstances change ice formed from standing water to a "coarse granular structure" nor make it "full of minute air bubbles," and if that be the case, the glacial origin of the sub-surface ice-sheet of Flaxman Island is, doubtless, established, as against Schrader's theory‡ that "the ground ice is the result of 'frozen bays, lagoons, lakelets, or perhaps other coastal bodies of ponded water now raised into low anticlines and cut back by wave action.'" But there still remains the theory advanced by the Canadian geologist Mr. J. B. Tyrrell,§ that the ice-sheets he has observed on the tundra west of Hudson's Bay and on the hill-slopes and in the valleys of the Yukon gold country were formed and are now being formed by the rising of underground water through fissures in the frost layer (from 50 to 200 ft. thick in the mining country) and its freezing into sheets two to four feet below the surface of the ground and approximately parallel with the surface. Mr. Tyrrell's arguments are based on extensive observation both in mountainous country and on plains remote from mountains. Whether ice formed along "planes of weakness parallel to the surface" (when the rising water finds itself unable to penetrate the water-soaked and adamant frozen surface layers of ground) would be of a structure similar to that observed at Flaxman Island, is apparently the crucial question. Otherwise, Mr. Tyrrell's theory (to which Mr. Leffingwell makes no reference in his article and with which he may be unfamiliar) would seem to form as plausible an explanation of the Flaxman Island ice-sheet as does the glacial one. A further consideration is that my own observations on the ice at Flaxman do not agree with Mr. Leffingwell's in this: he records (p. 57) that "Nowhere is the base of the ice exposed, so no estimate of its thickness can be made"; while I have (at a different season of the year) seen the base exposed, showing an unmeasured thickness of not over four feet. This thickness agrees very well with that of the sheets observed by Mr. Tyrrell, both in the Yukon

* Flaxman Island, a Glacial Remnant, by Ernest De Koven Leffingwell. *The Journal of Geology*, vol. XVI, pp. 56-63. The article is dated at Flaxman Island, October 15, 1906.

† Schrader, F. C., Professional Papers, No. 20. U. S. Geological Survey.

‡ Op. cit., p. 96.

§ Tyrrell, J. B., *Chrystosphenes or Buried Sheets of Ice in the Tundra of North America*. *Journal of Geology*, vol. XII, pp. 232-236.

and near Hudson's Bay, and which he describes as ranging in thickness from a few inches to four feet. I have also seen outcrops of ice along the beach east of the mouth of the Colville River, and at that point mountains, which could have been sources of glaciers, are very much farther from the coast than they are at Flaxman Island, a hundred miles farther east. So far as I could see, this ice was of exactly the same character as that which I had seen at Flaxman, and showed on melting about the same residuum of sand particles, rock fragments, etc., as does the ice studied by Mr. Leffingwell on the island. Seeing that the extensive but thin sheets of ice observed by Mr. Tyrrell* on the Barren Grounds are hardly open to explanation by a glacial hypothesis (the fact that mountains are hundreds of miles away is only one of the many difficulties in the way of such a theory), is it not likely that not only the ice deposits at Cape Halkett and the Colville mouth but also those at Flaxman may have another than a glacial origin? Mr. Leffingwell's own more extended observations in the north the summer (1907) following the writing of his present article may serve to throw more light on the subject.

V. S.

VARIOUS.

A GENERAL COMMITTEE ON GEOLOGICAL NOMENCLATURE.—The BULLETIN referred in the February number (p. 104) to the resolution of the Mississippi Valley Association of State Geologists expressing its belief "in the desirability of a thorough reconsideration of the principles which should govern the nomenclature of geology." The Geological Society of America at its meeting in December, acting upon this initiative, recommended to the organizations concerned that a general committee on geological nomenclature be formed, one-fifth of its members to be chosen from the U. S. Geological Survey, and one-fifth each from the State geological organizations, the Canadian Geological Survey, Mexico, and from geologists at large selected by the Geological Society of America; this general committee to have authority to appoint special committees on nomenclature for the investigation of the particular questions referred to them; the special committees to report their conclusions to the general committee; and the fact that any subject is under discussion by the general committee to be made known to the scientific public. The purpose of the recommendations is to provide a source from which any geologist may on application obtain advice regarding nomenclature.

THE SPELLING OF PLACE NAMES.—At the instance of Prof. Ricchieri of the Accademia Scientifico-Letteraria, Milan, the reader of a paper on this subject at the Sixth International Geographical Congress, held at London in 1895, the organizing committee of the Ninth International Geographical Congress, which is to meet at Geneva between the 27th July and the 6th August this year, has placed on the list of agenda of the Congress the following question:

What are the principal difficulties in the way of arriving at an international agreement on the transcription and orthography of geographical names and in what manner can they be surmounted?

Prof. Ricchieri, believing that if this problem is to be solved at all it can only be by slow stages and methodical procedure, proposes that all that should be aimed at in the first instance should be a preliminary agreement, among a few men of different nationalities interested in this question, as to the fundamental points on

* Op. cit., p. 234.

which it is necessary that a final agreement should, if possible, be reached, and that a statement of those points should be laid before the Congress at Geneva, which should then be asked to appoint a small committee to study and procure the discussion of those points, and ultimately to draw up proposals and resolutions thereon. He further suggests that this committee should be expected to publish its proposals at least one year before the meeting of the next International Congress, which, it is hoped, might then be in a position to draw up final resolutions on the subject. This scheme of operations has received the support of Prof. Henri Cordier of the *École spéciale des langues orientales*, Paris; Prof. Robert Sieger of the University of Graz; and of Mr. G. G. Chisholm, Recognized Teacher of the University of London (Birkbeck College), who have agreed to co-operate with Prof. Ricchieri in drawing up the preliminary statement of fundamental points requiring solution to be laid before the Geneva Congress. Mr. Chisholm will be glad to forward to Prof. Ricchieri any suggestions on this question sent to him at his private address (59 Drakefield Road, Upper Tooting, London, S. W.)

THE CARTOGRAPHIC MONTHLY REPORT.—A new department of *Petermanns Mitteilungen*, which will appear in every issue, was introduced in the January number. It will be known as the *Kartographischer Monatsbericht*. Its editor is Dr. Hermann Haack, a member of the staff in the Perthes establishment at Gotha and widely known as the editor of the *Geographen-Kalender* and author of reports on the progress of cartographic science in the *Geographisches Jahrbuch*. The *Monatsbericht* will also be issued as a separate, at 6 marks a year.

The new department should be a welcome addition to the facilities of working geographers and map houses. The first report includes 92 titles of new maps. A number of them are mother maps. In the arrangement, atlases come first, then maps of the world, then the continents with their countries, dependencies, or divisions, and the polar regions. In each section the maps are arranged alphabetically, as far as possible, under the names of authors. After the author come the title, scale, coordinates, showing area embraced; size, measured from inner margin; publisher, or periodical in which the map appears, title of the letterpress which the map illustrates, if any, and place and year of publication. Each map has numerals indicating the volume in which it appears and its place in the series of notices. A few words of comment are occasionally inserted.

The quality entitling a map to notice is new or helpful data; possessing this quality a map is included, whether an elaborate product or merely a sketch map.

Many of the maps are such as have not commonly been noticed in lists of new maps, perhaps because, appearing chiefly in geological publications, some of them are not widely distributed in geographical libraries.

The price of the maps is given when possible. Many good maps illustrating books are in the list. A sketch map of an Arctic sledge journey is credited to one periodical, while the same map on a larger scale in another publication is not mentioned. It might be more convenient for the student to obtain the latter map, and its existence should at least be noted.

The *Monatsbericht* will supply a real need if its review of the cartographic field shall be comprehensive as far as authoritative and mother maps are concerned; and if its contents are so indexed that cartographers and geographers may easily find in the coming volumes the latest and most authoritative cartographic expression of facts. Such a publication will tend towards the improvement of the average quality of the map product.

VOLCANO AND EARTHQUAKE OBSERVATORIES.—The Geological Society of America, at its recent general meeting, recommended to the several North American Governments and to private enterprise the establishment of volcano and earthquake observatories for the purpose of making permanent records of the physical phenomena accompanying earthquakes and eruptions, both before and after the events. Such records have a direct bearing on the possibility of predicting these occurrences and on the protection of life and property. The North American Governments have in their territories a wide field for the investigation of active volcano and earth movements.

DR. ROBERT KOCH, the German bacteriologist, who has returned from his investigation of sleeping sickness in German East Africa, will visit America this spring. *Science* says that he will rest for a year from his scientific work, and has therefore refused to accept invitations to lecture in the United States. He discovered in Africa that a preparation of arsenic brought to a standstill the progress of sleeping sickness in the human system. He also believes that he has sufficient evidence for declaring that the poisonous infusoria which are the cause of the disease are imbibed from the crocodile by the tsetse fly and introduced by its bite into the blood.

DR. L. A. BAUER, Director of the Department of Terrestrial Magnetism of the Carnegie Institution, lectured at Columbia University on Feb. 11 on "The Magnetic Survey of the Pacific Ocean."

THE "Statistique Annuelle de Géographie Comparée," for 1907, by Prof. Jean Birot (Hachette & Co., Paris), maintains its reputation as a well-arranged statistical handbook in which many kinds of facts for the various countries are grouped for purposes of comparison. In the paragraph relating to maize, for example, the production of the eight countries leading in this culture is given with a statement of the production of the United States (which supplies five-sixths of the World's crop) for ten consecutive years. The exportations of the six largest exporting countries are given. The comparative idea is kept in view throughout and the tables are very convenient and suggestive.

THE AMERICAN GEOGRAPHICAL SOCIETY.—A Regular Meeting of the Society was held at Mendelssohn Hall, No. 119 West Fortieth Street, Tuesday, February 25, 1908, at 8.30 o'clock, P. M., Mr. Levi Holbrook in the chair.

The following persons, recommended by the Council, were elected to Fellowship:

Robert L. Loughran.

F. Stokes Berlin.

The Chairman then introduced Mr. John Barrett, who addressed the Society on his journey Along Untravelled Routes of the Andean Cordilleras in Colombia and Ecuador. Stereopticon views were shown.

On motion, the Society adjourned.

OBITUARY.

PIERRE-JULES-CESAR JANSSEN.—This distinguished savant died in December at the age of 83. He was formerly President of the Paris Geographical Society and won distinction in the fields of astronomy and geography. He was director of l'Observatoire d'astronomie physique de Meudon, and was especially well known for the observatory which he was the means of establishing on the

summit of Mont Blanc. Prof. de Lapparent delivered a eulogy in the name of the Paris Geographical Society at the funeral of the deceased scientist.

Lieut.-General SIR RICHARD STRACHEY, R.E.—This eminent man of science died on February 12 at the age of over ninety years. He was elected a Fellow of the Royal Society in 1854 for work in botany, geology, and physical geography in the Kumaon Himalayas, and he was the first to treat scientifically of the physical and botanical geography, geology, and meteorology of the western Himalaya and of Tibet. As an officer of the Royal Engineers he had a long and distinguished career in India. He was Chairman of the Meteorological Council, 1883-1905, and served as President of the Royal Geographical Society, 1888-1890.

NEW MAPS.

AFRICA.

CONGO FREE STATE.—Le chemin de fer du Haut-Lualaba. Scale, 1:2,000,000, or 31.56 statute miles to an inch. *Le Mouvement Géographique*, Vol. 25, No. 4, Brussels, 1908.

A sketch map showing the railroad now being built from Kindu to Buli around the rapids and falls in the upper Lualaba, the head stream of the Congo.

CONGO FREE STATE.—Wasserstrassen und Eisenbahnen im freien Kongostaat. Scale, 1:2,000,000, or 189.4 statute miles to an inch. By Prof. Dr. Adrien de Ghellinck. *Geog. Zeitschrift*, Vol. 14, No. 2, Leipzig, 1908.

Illustrates a paper by Dr. Ghellinck on navigation and railroads in the Congo Free State. The navigable parts of the Congo and its tributaries are shown in heavy black. Railroads in operation, construction, or projected, and telegraph lines are indicated. A few heights along the main river are given in meters.

CONGO FREE STATE.—Carte du District du Kasai. Scale, 1:1,000,000, or 15.8 statute miles to an inch. Department of the Interior, Congo Free State, Brussels, 1907.

The nomenclature is unusually full. Boundaries of the State, the District, and its sub-divisions, itineraries, chief towns and State stations are in red, black symbols distinguish commercial posts, villages, missions, and tribes, blue is used for hydrography and brown for hill features.

CONGO FREE STATE.—Carte Foncière de l'État Indépendant du Congo. Scale, 1:8,000,000, or 126.2 statute miles to an inch. Fifth edition. *Le Mouvement Géographique*, No. 5, Brussels, 1908.

Shows the national domain and private lands in red and the crown lands and land concessions in blue tints. The lands held under concessions by commercial companies are distinguished by numerals.

SOUTH AFRICA.—Bartholomew's Reduced Survey Map of South Africa. Scale, 1:2,500,000, or 39.4 statute miles to an inch. John Bartholomew & Co., Edinburgh, 1907. (Price, 2s.)

A new and revised edition of this fine tourist map, which is a generalization of our knowledge of South Africa south of the 22nd parallel. Five tints are